

Hedging a portfolio

Situation

In anticipation that the stock market is due for a temporary correction, initiating a short SXF hedge will allow a manager to protect his portfolio of Canadian stocks without having to unwind his initial position.

Suppose that, on December 5, a manager wants to hedge his Canadian portfolio against adverse market moves over the next three months.

Objective

To hedge the portfolio until March against a stock market decline.

Strategy

MARKET SNAPSHOT ON DECEMBER 5:

Value of the portfolio:	\$1,530,000
SXF, March contract:	439.30
Beta of the portfolio:	1.3

The manager must base the size of the futures position on the size of the exposure, using the following formula:

$$N = \frac{\text{Value of the equity position} \times \beta}{\text{Future price of the March contract} \times \$200}$$

$$N = \frac{\$1,530,000 \times 1.3}{439.20 \times \$200} = 22.6, \text{ or } 23 \text{ contracts}$$

The manager sells 23 March SXF contracts.

Results

On March 5, the market S&P/TSX has declined to 377.99 from 438.24.

MARKET SNAPSHOT ON MARCH 5:

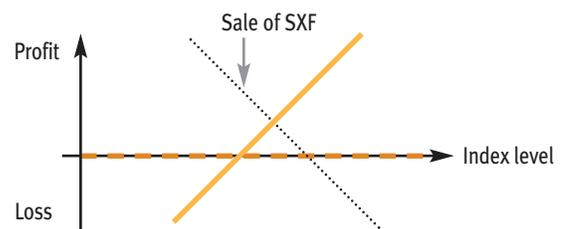
Value of the portfolio:	\$1,250,000
SXF, March contract:	378.10
Beta of the portfolio:	1.3

PROFIT / LOSS

Loss on the portfolio:
 $\$1,530,000 - \$1,250,000 = \$280,000$

Gain on the futures contracts:
 $23 \times (439.30 - 378.10) \times \$200 = \$281,520$

Net gain = \$1,520



..... Value of the index — Value of the portfolio - - - Resultant

The profit/loss payout outcomes for the portfolio position and the short futures position are presented in the above diagram: the futures position neutralizes the equity position.

Commentary

Note that if, contrary to the expectations of the manager, the value of the portfolio would have appreciated, the loss on the futures position would be offset by the gain on the equity position of the portfolio. Thus, the manager would have again neutralized his position while maintaining the value of his portfolio at its initial level.

Transaction fees are not taken in consideration in this example.